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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/780,114	02/17/2004	Steven W. Dow	021819-000130US	8036

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EXAMINER	
WEHBE, ANNE MARIE SABRINA	
ART UNIT	**PAPER NUMBER**
1633	

MAIL DATE	DELIVERY MODE
09/06/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/780,114	DOW ET AL.	
	Examiner	Art Unit	
	Anne Marie S. Wehbe	1633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 June 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,7,8,10-16,19-21,29,30 and 32-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,7,8,10-16,19-21,29,30 and 32-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Applicant's amendment and response received on 6/7/07 has been entered. Claims 6; 9, 17-18, 22-28, and 31 have been canceled. Claims 1-4, 7-8, 10-16, 19-21, 29-30, and 32-34 are currently pending and under examination. It is noted that the applicant has canceled subject matter drawn to non-elected inventions and has further canceled claims reciting the administration of a cytokine for which an election of species had been applied. An action on the merits follows.

Those sections of Title 35, US code; not included in this action can be found in the previous office action.

Priority

Applicant's amendment of the specification to insert the current status of the 09/104,759 application is acknowledged.

Double Patenting

The rejection of claims 1-8, 10-22, 24 and 29-34 for nonstatutory obviousness-type double patenting as being unpatentable over claims 10-18 of U.S. Patent No: 6,693,086, hereafter referred to as the '086 patent, is withdrawn in view of applicant's amendment to the claims

which now recite the limitation that the nucleic acid molecule without a gene insert, or fragment thereof does not comprise a bacterial nucleic acid sequence.

Claim Rejections - 35 USC § 112

The rejection of previously pending claims 1-22, 24 and 29-34 under 35 U.S.C. 112, first paragraph, for lack of enablement is maintained over amended claims 1-4, 7-8, 10-16, 19-21, 29-30, and 32-34 and withdrawn over canceled claims 6, 9, 17-18, 22, 24, and 31. Applicant's amendments and arguments have been fully considered but have not been found persuasive in overcoming the rejection for reasons of record as discussed in detail below.

It is first noted that although the previous rejection identified a scope of enablement in the specification for a method for eliciting a systemic, non-antigen specific immune response in a mammal, comprising administering to said mammal an amount of a composition comprising a cationic liposome delivery vehicle and an isolated bacterially-derived pCR3.1 vector without a gene insert, the applicant has now amended the claims to recite that the nucleic acid molecule does not comprise bacterial sequences. As discussed in the previous office action, the specification does not provide an enabling disclosure for methods of eliciting a systemic, non-antigen specific immune response using a cationic liposome delivery system and any nucleic acid vector without a gene insert which is not an empty bacterially-derived pCR3.1 or for using said methods to treat any viral infection, cancer, or allergic condition. As such, based on the amendments to the claims, no scope of enablement remains.

The applicant argues that there is a presumption of enablement such that the burden is on the Office to provide objective reasons for non-enablement, and that the Office has not met this burden. The applicant further states that the presence or need for routine experimentation is consistent with an enabling specification, and that the instant specification provides sufficient support and exemplification for the claimed invention, citing pages 13 and 54 of the specification. In response, it is first noted that the previous office action analyzed the specification in direct accordance to the factors outlined in *In re Wands*, namely 1) the nature of the invention, 2) the state of the prior art, 3) the predictability of the art, 4) the amount of direction or guidance present, 5) the presence or absence of working examples, 6) the quantity of experimentation necessary, 7) the relative skill of the skilled artisan, and 8) the breadth of the claims, and presented detailed scientific reasons supported by publications from the prior art for the finding of a lack of enablement for invention as claimed. It is also noted that case law including the Marzocchi decision sanctions both the use of sound scientific reasoning and printed publications to support a holding of non-enablement (see *In re Marzocchi* 169 USPQ 367, and *Ex parte Sudilovsky* 21 USPQ2d 1702). Further, the unpredictability of a particular art area may alone provide reasonable doubt as to the accuracy of the broad statement made in support of enablement of claims. See *Ex parte Singh*, 17 USPQ2d 1714 (BPAI 1991). 35 U.S.C. 112 also requires that the scope of the claims must bear a reasonable correlation to the scope of enablement provided by the specification to persons of ordinary skill in the art. *In re Fisher*, 166 USPQ 18, 24 (CCPA 1970). Thus, the Office did in fact meet its burden for finding non-enablement for the scope of the claimed invention.

Furthermore, the teachings of the specification, including the working examples, were analyzed in detail and were not found to provide an enabling disclosure for the claimed methods. In particular, the specification was not found to enable the use of any non-bacterial sequence of two or more nucleotides or any non-bacterial empty vector as a non-specific immunostimulatory molecule to treat conditions such as cancer, viral infections, and allergic inflammation. As discussed in the previous action, the specification fails to adequately describe actual mammalian, insect, or viral, nucleic acid sequences which are immunostimulatory, with the exception of total salmon sperm or calf thymus DNA. However, both of these embodiments comprise the full chromosomal DNA content of salmon sperm or a calf thymus and as such do not qualify as a vector without a gene insert, or a fragment thereof. The specification does not teach which sequences within the sheared mammalian chromosomal DNA are actually immunostimulatory or how to use such sequences to construct a vector without a gene insert capable of inducing non-antigen specific systemic immunity. In addition, it is noted that because both salmon sperm DNA and calf thymus DNA are simply sheared chromosomal DNA, it is not clear which fragments of the DNA are actually responsible for stimulating non-specific immunity. In the absence of any particular evidence, it is possible that fragments of the DNA are actually expressed following administration in vivo, since the genomic DNA contains both large and small fragments which may include complete genes or expressible fragments thereof capable of being taken up and expressed by host cells. In addition, it was pointed out that the specification itself teaches that at the time of filing, it was established in the art the DNA from eukaryotic sources is not stimulatory, citing a number of references, see page 55 in the specification. While the applicant argues that these citations are examples of what was erroneously believed in the prior art and that

the applicant's demonstration that two dramatically different types of DNA- one from fish and one from a mammal- were used successfully shows that applicant has supported the enablement of the claimed invention, the rejection of record clearly points out that the specification fails to identify which sequences within the sheared total chromosomal DNA from salmon sperm or calf thymus are responsible for stimulating non-specific immunity or show that such sequences can be used to produce an immunostimulatory vector without bacterial sequences. Further, identification of the immunostimulatory sequence within the chromosomal DNA would require undue experimentation since the specification provides absolutely no guidance as to any particular sequence motifs or structures in fish or mammalian DNA that are immunostimulatory. Finally, regarding the teachings of Huang et al., Huang et al. was cited in the previous office action as evidence that not all vectors comprising bacterial sequences are immunostimulatory. Since the claims now exclude nucleic acid sequences from bacteria, the teachings of Huang et al. are no longer relevant to the instant invention as claimed. Thus, applicant's arguments regarding Huang et al. and additional arguments regarding the use of empty plasmid vector comprising bacterial DNA are moot in view of the amendments to the claims.

Therefore, based on the enormous number of non-bacterial nucleic acid vector sequences encompassed by applicant's claims, the lack of adequate description of any actual non-bacterial immunostimulatory nucleic acid sequences derived from any non-bacterial source or guidance as to how such sequences can be used to construct a vector which retains immunostimulatory properties, the nature of the invention and the state of the art regarding the characteristics of immunostimulatory DNA sequences and the art recognized non-immunostimulatory properties of mammalian DNA, and the limitations of the working examples to the use of sheared total

chromosomal DNA, it would have required undue experimentation to identify any particular non-bacterial immunostimulatory sequences of 2 or more nucleotides or to use such sequences to produce an empty vector which does not contain bacterially derived sequence for use in the instant methods as claimed.

The rejection of claims 17-18 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention, is withdrawn in view of the cancellation of these claims.

Claim Rejections - 35 USC § 103

The rejection of claims 1, 17-18 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,121,247 (9/19/00), hereafter referred to as Huang et al., in view of U.S. Patent No. 5,830,878 (11/3/98), hereafter referred to as Gorman et al, is withdrawn in view of the cancellation of claims 17-18 and the amendment to claim 1 which now recites that the nucleic acid does not comprise bacterial sequences. It is also noted that the remaining pending claims no longer recite the embodiment wherein a cytokine gene is present.

No claims are allowed.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication from the examiner should be directed to Anne Marie S. Wehbé, Ph.D., whose telephone number is (571) 272-0737. If the examiner is not available, the examiner's supervisor, Joseph Woitach, can be reached at (571) 272-0739. For all official communications, **the new technology center fax number is (571) 273-8300**. Please note that all official communications and responses sent by fax must be directed to the technology center fax number. For informal, non-official communications only, the examiner's direct fax number is (571) 273-0737. For any inquiry of a general nature, please call (571) 272-0547.

The applicant can also consult the USPTO's Patent Application Information Retrieval system (PAIR) on the internet for patent application status and history information, and for electronic images of applications. For questions or problems related to PAIR, please call the USPTO Patent Electronic Business Center (Patent EBC) toll free at 1-866-217-9197. Representatives are available daily from 6am to midnight (EST). When calling please have your application serial number or patent number available. For all other customer support, please call the USPTO call center (UCC) at 1-800-786-9199.

Dr. A.M.S. Wehbé

/Anne Marie S. Wehbé/
Primary Examiner, A.U. 1633